DOCUMENT RESUME

ED 276 832 CE 045 883

AUTHOR Chenault, Shirley
TITLE Six Introductory Lessons for the Microcomputer Spreadsheet. Student's Workbook with Teacher's Key.
PUB DATE Dec 86
NOTE 20p.; Paper presented at the Annual Convention of the American Vocational Association (Dallas, TX, December 7-9, 1986).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052) -- Speeches/Conference Papers (150) -- Guides - Classroom Use - Materials (For Learner) (051)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Accounting; Business Education; *Computer Oriented Programs; *Computer Software; Learning Activities; Lesson Plans; Mathematics Instruction; *Microcomputers; Postsecondary Education; *Programing; Secondary Education; Transparencies
IDENTIFIERS *Spreadsheets

ABSTRACT

This document contains six lessons for a class on using computer spreadsheets. Each lesson contains an objective, terminology, and directions for step-by-step completion of the lesson activites. Worksheets are included for teachers to replicate and hand out or to use as overhead transparencies. The lessons cover the following concepts: introduction to spreadsheets, spreadsheet placement terminology and formula insertions, spreadsheet cursor movements, creating a spreadsheet, entering formulas into spreadsheet cells, entering data and formulas onto the spreadsheet, formatting cells, and correcting cells. A sample advanced lesson, notes to the teacher, and suggested resources are included in the package. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED276832

SIX INTRODUCTORY LESSONS

FOR THE

MICROCOMPUTER SPREADSHEET

STUDENT'S WORKBOOK
with Teacher's Key

****

Developed and Compiled by
SHIRLEY CHENAULT
Office Occupations Instructor
Weatherford College
Weatherford, TX 76086
(817) 594-5471

****

For the 1986
American Vocational Association Convention
Wyndham Hotel
Dallas, Texas

****

Contributing Microcomputer Spreadsheet Instructors:
Glenda Anderson
Shirley Chenault
David Epperhart
David Gathier
Laura Wiggs

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

S Chenault

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE045883

BEST COPY AVAILABLE

TEACHING THE MICROCOMPUTER SPREADSHEET

by Shirley Chenault

When introducing the microcomputer spreadsheet to a class, take it slow. Teach students only one or two concepts per class. In learning spreadsheets, students must "learn to crawl before they can walk."

Begin on the first day by defining spreadsheet. It is an arrangement of rows and columns for doing calculations. Compare the spreadsheet to something familiar like a checkbook.

Before turning on the computer, use the overhead projector to show the arrangement of the rows and columns using Sheet 3 of this packet. By using a colored piece of plastic the size of the cells on the grid, teach the students the cursor moves. Explain the spaces within a cell. As you move the plastic around have the students call out the screen locations such as B1, G11, etc.

Next, turn on the computer and show the students a spreadsheet file you have saved to disk (similar to Sheet 6). Move the cursor around. Comparing the spreadsheet to a checkbook again, show them how the formulas work when numbers. For example: "Wouldn't it be nice if you could correct a mistake in your checkbook and all incorrect numbers would correct themselves automatically." Do not attempt to present formulas and formats in the first lesson. It is far too soon for students to grasp these concepts.

Break all lessons down into easy steps. It is recommended that the students begin by using paper to create their first spreadsheet, then a few lessons along, transfer that spreadsheet to the screen.

Unfortunately, there are few materials available and teachers must create their own materials for most lessons. Some good advice is "always work the problems first;" that is, before presenting the lessons to the students so that you can be in control of the lessons.

Six beginning lessons are presented in this packet. Depending on the amount of time you have in a classroom session, these lessons can last several days. Avoid letting students push you beyond the lesson you've planned. Respond to their questions by saying, "That's not part of our lesson today." Or, you might say, "I think you might figure that out if you work at it a little longer."

Following Lesson 6, you can bring together problems to teach the step-by-step concepts from other sources. Some suggested sources are:

SPREADSHEETS
Dictation Disc Company

SUPERCALC
by Shelly & Cashman

Minnesota Education Computing Consortium
Banana, Inc.
2501 W. 8th Street
Blooming, MN 55431

MATRIXING FOR APPLE AND IBM
by Harry Anbarlian

AN INTRODUCTION TO VISICALC
McGraw Hill Publishing Company

Software manuals and reference cards should be referred to often and made available to the students.

After the introductory concepts and commands have been mastered, it is suggested that problems with a great deal of data entry be kept to a minimum. Some students type slower than others, and data entry is not the objective of the lessons. A teacher disk containing the spreadsheet to be changed or corrected can be copied by all students, one at a time, onto their student disks.

Lessons which follow this packet should include learning to:

Load a File
Print
Freeze Titles
Include Decimal Points and Zeros
Enter formulas using a SUM
Insert and Delete Rows and Columns
Copy or Replicate Columns, Rows, and Formulas
Recalculate
Merge Spreadsheets with Word Processing
Merge Spreadsheets with Data Base

Some assignments should be exploration/discovery and others should be problem-solving. For example, when learning labels and values, students must discover that some numbers such as dates (12/06/86) must be entered as labels. Even if the teacher tells them, they must see the unusual entries they get when they enter them as numbers before they really learn. Give them some problems that will produce error situations, and let them determine the solutions. For example, inserting new rows or columns will mess up preset formulas. After such a problem is a good time to teach recalculation.

Throughout the course, continue to use overhead transparencies to illustrate concepts and formulas. Use the Spreadsheet Grid (Sheet 3) with pen and ink to point out positions and entries. Make transparencies of pages from the manual when needed.

Teach the spreadsheet to your students; don't hand them a "do it yourself manual." You will enjoy the task!

LESSON 1

Objective: To familiarize you with spreadsheet concepts.

Terminology:

Spreadsheet - An arrangement of rows and columns for doing calculations.

Directions:

1. Use Sheet 1.
2. Use pencil.
3. Pencil in payroll data from Sheet 2 to Sheet 1.
4. Create additional columns for "Gross Earnings" and "Net Pay."
5. Calculate each row horizontally manually or with a calculator.
6. List formulas for the calculations of the rows at the bottom of the page.
7. Show Sheet 1 to instructor when completed. Keep Sheet 1 to use in completing Lesson 2.

LESSON 2

Objectives:

- To introduce spreadsheet placement terminology.
- To acquaint you with spreadsheet formula insertions.

Terminology:

Cell - A single location on a spreadsheet which contains a limited number of spaces.
Cell Address - A column letter and row number, e.g. A1 or G11.
Cell Coordinates - The intersection of a column and a row, e.g. A3 and G10.
Cell Size - The number of horizontal spaces within a cell. The number varies with different software packages.
Column: - The vertical portions of the spreadsheet, e.g. A,B,C.
Default: - The preset conditions of the software which can be modified, e.g. column width setting.
Formula: - A mathematical statement, e.g. an equation.

Directions:

1. Use Sheet 3 (Spreadsheet Grid).

2. Use pencil.

3. Transfer columnar data from Lesson 1 into cell locations.

4. In totals columns, write appropriate formulas for calculating totals instead of the actual totals. (Example: +B1+C1+D1). It is not necessary to show totals on the grid, only formulas.

5. Give Sheet 3 in to instructor when completed.

LESSON 3

Objective: To acquaint you with spreadsheet cursor movements.

Terminology:

Command Line - A prompt listing command choices.
Cursor - See Spreadsheet Cursor or Status Line Cursor.
File - A stored spreadsheet.
Go to Coordinate - A software command to move the cursor immediately to a specified location.
Scrolling - Movement of the spreadsheet cursor vertically or horizontally to display portions of the spreadsheet that exist beyond the boundaries of the screen.
Spreadsheet Cursor - The highlighted portion of the spreadsheet which indicates the cell where entries may be made.
Status Line Cursor - The blinking underline that appears in the status area when keyboarding or editing an entry.

Directions:

1. Load spreadsheet software.
2. Access File "Scroll"
3. Move spreadsheet cursor to each cell listed on Sheet 4. Use arrow keys and Go to Coordinate command.
4. Fill in the blanks on Sheet 4.
5. Give Sheet 4 in to instructor when completed.

Lesson 4

Objectives:

- To give you the experience of creating a spreadsheet.
- To teach you to enter formulas into spreadsheet cells.

Terminology:

Label - The column and row headings or titles that begin with a letter or label indicator (").
PRINT - A command to tell printer to print a copy of the screen.
SAVE - A Command to send inputted data to disk for storage.
Value - An entry on the worksheet used in calculations, e.g., numbers or formulas.

Directions:

1. Load spreadsheet software.

2. Copying from Sheet 3, enter data and formulas in the appropriate cells.

3. Name the file "Payroll" and save it to disk.

4. Print a hardcopy for your instructor.

LESSON 5

Objective: To give you the experience of creating a spreadsheet on the screen.

Terminology:

Template - Arrangement of vertical columns and horizontal rows on a spreadsheet.

Directions:

1. Load spreadsheet software.
2. Copying from Sheet 5, enter column and row headings of Petty Cash spreadsheet.
3. Name the file "Cash."
4. Save the template to disk. You will use your stored file "Cash" in next lesson.
6. Print one copy of "Cash."
7. Give your printed copy, containing vertical and horizontal titles to your instructor.

LESSON 6

Objectives:

- To allow you to enter data and formulas onto the spreadsheet.
- To teach you to format cells.
- To teach you to Correct a cell.

Commands:

BLANK - A command to delete contents of a cell.
FORMAT - A command used to arrange spreadsheet date clearly and more attractively.

Directions:

1. Load spreadsheet software.
2. Access your spreadsheet file "Cash."
3. Using Sheet 6, enter the petty cash data.
4. Format each cell to align numbers and include decimals and zeros as shown on Sheet 6.
5. Position spreadsheet cursor at the end of each horizontal row to enter correct formula for total.
6. Position spreadsheet cursor at the bottom of each vertical Column to enter correct formula to total column.
7. Save "Cash" to disk over previous file.
8. Call instructor over to view your formulas as you scroll your spreadsheet cursor across and down the totals columns and rows.
9. Upon instructor approval, print a copy of your completed "Cash" file and give it to instructor.

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						12
16	11					

SHEET 1

Spreadsheet Grid

	A	B	C	D	E	F	G	H	I	J
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20		13							14	
21										

SHEET 3

SHEET 2

	A	B	C	D	E	F	G	H
1								
2				PAYROLL				
3								
4			TOT					
5	EMPLOYEE		HRS		RATE			TAXES
6								
7	JONES, A.		40.00		6.50			83.85
8	ADAMS, S.		40.00		6.50			78.00
9	SMITH, L.		40.00		6.50			86.78
10	HUNT, M.		40.00		6.50			86.78
11	KORA, K.		40.00		6.50			78.00
12	KENT, J.		40.00		6.50			78.00
13	JESTER, N.		40.00		5.50			66.00
14	SAHARA, O.		40.00		5.50			66.00
15	DOWNS, P.		32.00		5.50			52.80
16	DIX, Y.		40.00		5.50			66.00

SHEET 4

SCROLLING AROUND THE SCREEN

DIRECTIONS: Write what is located in the following Cells in the space provided.

CELL A1 _____

CELL C1 _____

CELL A3 _____

CELL A12 _____

CELL D11 _____

CELL H9 _____

CELL G11 _____

CELL G12 _____

CELL C6 _____

CELL C12 _____

CELL E9 _____

CELL E11 _____

CELL X100 _____

CELL AH150 _____

CELL AD20 _____

CELL K123 _____

CELL A54 _____

CELL AC 189 _____

CELL A50 _____

CELL AK 65 _____

CELL AK65 _____

WHAT IS THE FORMULA ON THE STATUS LINE OF G11? _____

WHAT IS THE FORMULA ON THE STATUS LINE OF G12? _____

Key to Sheet 4

INPUT DATA FOR
SCROLLING AROUNDTHE SCREEN

Instructors should enter this data and save it as Scroll. Additional information may be added as desired.

CELL A1	FINDING
CELL C1	AROUND
CELL A3	TEMPLATE
CELL A12	JOHNSON
CELL D11	34
CELL H9	HOURS WK
CELL G11	125.29
CELL G12	103.73
CELL C6	10
CELL C12	50456654
CELL E9	OLD RATE
CELL E11	3.35
CELL X100	HOORAY!
CELL AH150	YOU
CELL AD20	HAVE
CELL K123	COMPLETE
CELL A54	YOUR
CELL AC 189	SPREADSH
CELL A50	SCROLL
CELL AK 65	LESSON

WHAT IS THE FORMULA ON THE STATUS LINE OF G11? /F$(V)+D11*F11

WHAT IS THE FORMULA ON THE STATUS LINE OF G12? /F$(V)+D12*F12

SHEET 5

PETTY CASH VOUCHER

EXPENSE	MON	TUE	WED	THURS	FRI	TOTAL
Transportation						
Park/Toll						
Breakfast						
Lunch						
Dinner						
Tips						
Misc						
Total						

SHEET 6

EXPENSE	MON	TUE	WED	THURS	FRI	TOTAL
Transportation	10.00	7.50	8.00	9.25	6.00	
Park/Toll	5.00	5.00	5.00	5.00	5.00	
Breakfast	4.50	4.25	3.75	5.10	2.98	
Lunch	20.00	25.00	22.00	18.50	5.75	
Dinner	60.00	50.75	75.65	42.56	6.50	
Tips	9.00	7.00	10.00	6.00	1.00	
Misc	1.00	2.25		4.00		
Total						

SAMPLE ADVANCED LESSON
Teacher Created

GRADE PROJECT 2

From the instructor disk, get the file READ1 which has the following information entered in it.

READ1	DW1	DW2	DW AVG	TEST1	TEST2	TESTAVG	EXAM	GRADE
JOE	60	70		80	70		80	
SUSIE	80	80		60	90		90	
DAVIE	90	90		90	70		75	
JACK	85	0		78	100		98	

1. Add the necessary formulas to average daily work and tests.

2. Add a formula to compute the six weeks grade. Daily average counts 40%, Tests count 40%, and the Exam counts 20%. Try using the pointer method to enter the formulas for daily average and test average. Provide formulas at the bottom of each column to compute the average of the column.

3. Protect the cells that have formulas.

4. Format the spreadsheet so that column headings appear over the numbers, grades entered are printed as whole numbers, grades computed appear as two-place decimals.

5. Save the spreadsheet as READ1.

6. Change the name of the spreadsheet to READ2. Change the column heading above the student names to READ2.

7. Change the formulas so that the six weeks grade gives equal weight to the average Daily Work, the Average Tests, and the Exam. Observe the new calculation. SAVE READ2.

8. Change DW1 to 100 for everyone. Change name of file to READ3. Change the column heading above the students to READ3. Save.

8. Insert a column to the left of the student names. Use a formula to number the students.

9. Re-arrange the students by final grades, in descending order.

10. Arrange the columns so the student number, the Daily Average, the Test Average, and the Final Average can be printed together. Let me check your work. Do not save the rearranged version.

11. Once you create a list of students or a shell, remember you can change the name and save it to disk for each subject; no need to re-enter it. For example, on this file, you could erase all grades, change name of file to READING and save; change name to SCIENCE and save; change name to MATH and save. Your disk would then have separate files for READING, SCIENCE and MATH.